

# Port Alberni Port Authority: 2012 Economic Impact Study *FINAL REPORT*

InterVISTAS  
CONSULTING GROUP

strategic  
transportation  
& tourism  
solutions



Prepared for  
**Port Alberni Port Authority**

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# Executive Summary

## Direct Economic Impacts of Ongoing Operations

Direct economic impact measures the employment and economic impact directly associated with the port (e.g., employees and operations of the terminal operator, tug operators, ships' agents, etc.).<sup>1</sup> Indirect and induced impacts are multiplier impacts in the wider economy stimulated by the port's activities (e.g., other businesses that supply goods and services to the port and spending by port employees).<sup>2</sup>

This study found that the direct impacts of PAPA's ongoing operations in 2012 include:

- 930 **direct** jobs in the Alberni Valley region, representing 870 **direct** person years of employment.<sup>3</sup>
- The **direct** economic impact of this employment on the provincial economy is:
  - \$86 million in gross domestic product (GDP);
  - \$237 million in economic output; and
  - \$48 million in wages.

***Ongoing operations at PAPA generate 870 direct person years of employment and \$48 million in direct wages annually.***

## Direct Economic Impacts of Ships' Crew Spending

In addition, vessels arriving at the port will bring in crew members, who will spend money on food and beverage, local transportation, etc. at Port Alberni. The spending of ships' crew while in Port Alberni, and its corresponding economic impacts, are also estimated.

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<sup>1</sup> Taxation impacts are based on calendar year 2011. Employment, wage, GDP and economic output impacts are based on June 2012 operations.

<sup>2</sup> Emphasis is placed on the direct economic impacts as these are based on data from the employer survey and are clearly identifiable.

<sup>3</sup> One person year of employment is equivalent to 1,832 hours of work. Person years are the same as full time equivalents (FTEs).

This study found that the direct impacts of ship's crew spending in Port Alberni in 2012 include:

- Three **direct** jobs in the City of Port Alberni, representing three **direct** person years of employment.
- The **direct** economic impact of this employment on the provincial economy is:
  - \$110,000 in gross domestic product (GDP);
  - \$280,000 million in economic output; and
  - \$80,000 in wages.

***Ships' crew spending at Port Alberni supports three direct person years of employment and \$80,000 in direct wages.***

## Total Ongoing Economic Impacts

The economic impact of the PAPA extends beyond the port, as other sectors of the economy are dependent on businesses of employers directly related to the port. Indirect and induced impacts are multiplier impacts in the wider economy stimulated by the port's activities (e.g. other businesses that supply goods and services to the port and spending by port employees, respectively).<sup>4</sup> Total impacts are calculated by adding together the direct, indirect and induced impacts for both ongoing operations at PAPA and ships' crew spending at Port Alberni.

The total impacts of ongoing operations of the PAPA and ships' crew spending at Port Alberni generates 1,990 person years of employment (nearly 2,120 jobs) province-wide, earning close to \$109 million in wages when multiplier impacts are present. Including indirect and induced impacts, nearly \$205 million in GDP and approximately \$492 million in economic output is contributed by the port to the provincial economy. The total economic impacts of ongoing operations of PAPA on the provincial economy are summarised in **Figure ES-1**.

***Combined impacts of ongoing operations at PAPA and ships' crew spending at Port Alberni generate 1,990 person years of employment annually.***

<sup>4</sup> Statistics Canada economic multipliers for the Province of British Columbia from the 2008 Interprovincial Input-Output model, the most recent available, were used to measure the indirect and induced economic impacts. These multipliers were updated with Consumer Price Indices to account for inflation.

**Figure ES-1: Total Ongoing Economic Impacts of PAPA in British Columbia, 2012**

Type of Impact	Employment (Jobs)	Employment (Person Years)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
<i>Direct</i>	930	870	48	86	237
<i>Indirect</i>	700	660	35	72	141
<i>Induced</i>	490	460	26	47	114
<b>Total BC Impacts</b>	<b>2,120</b>	<b>1,990</b>	<b>109</b>	<b>205</b>	<b>492</b>

Notes: Total ongoing economic impacts of PAPA include impacts of ongoing operations at PAPA and ships' crew spending at Port Alberni.

## Annual Tax Contributions

The overall tax revenue contribution to all levels of government generated by ongoing economic activity at the port and ships' crew spending in the city is approximately \$18 million annually. The federal government received nearly \$13 million (70% of the total), while the provincial government received over \$4 million in tax revenue (24% of total tax revenue). The municipal government received over \$1 million (6% of the total) in municipal accord agreements and property taxes paid by the port and its tenants. Less than 1% of taxes were paid by cruise passengers and crew, approximately 97% of taxes were paid by employers and their employees, and the remaining 2% by PAPA. See **Figure ES-2**.

***Ongoing operations at PAPA generate \$18 million per annum in government tax revenues.***

**Figure ES-2: Annual Tax Contributions of PAPA by Taxpayer (\$ Millions)**

<b>Taxpayer</b>	<b>Federal</b>	<b>Provincial</b>	<b>Municipal</b>	<b>Total</b>
Ships' Crew	0.02	0.01		<b>0.03</b>
Employers or Employees	12.64	4.19	0.89	<b>17.72</b>
Port Alberni Port Authority	0.10	0.15	0.13	<b>0.38</b>
<b>Total</b>	<b>12.76</b>	<b>4.35</b>	<b>1.02</b>	<b>18.13</b>

## One-time Economic Impacts of PAPA's Capital Expenditures in 2012

There are also economic impacts associated with the port's capital expenditures. Using Statistics Canada economic multipliers, the economic impacts of the port's capital expenditures in 2012 were estimated.

In 2012, the PAPA spent over \$1.7 million dollars in capital expenditures.<sup>5</sup> The Port Authority's capital expenditures in 2012 generate nine **direct** person years of employment and \$430,000 in **direct** wages. The total economic impact of the port's 2012 capital expenditures is summarised in Figure ES-3.

***PAPA's capital expenditures in 2012 generate nine person years of direct employment and \$430,000 in direct wages.***

<sup>5</sup> Estimated capital expenditures for 2012 were provided by the Port Alberni Port Authority.

**Figure ES-3: Total Economic Impact of PAPA's Capital Expenditures in British Columbia, 2012**

Type of Impact	Employment (Person Years)	Wages (\$ Thousands)	GDP (\$ Thousands)	Economic Output (\$ Thousands)
<i>Direct</i>	9	430	790	1,730
<i>Indirect</i>	6	310	530	1,000
<i>Induced</i>	4	220	390	910
<b><i>Total BC Impacts</i></b>	<b>19</b>	<b>960</b>	<b>1,710</b>	<b>3,640</b>

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# 1. Introduction

InterVISTAS Consulting Inc. (InterVISTAS) was commissioned by the Port Alberni Port Authority (PAPA) to conduct an economic impact study of its ongoing operations.<sup>6</sup> The Port Authority is responsible for marine management and operations within Alberni Inlet from Somass River to Tzartus Island. The purpose of this study is to determine the economic contribution of the port and other related businesses to employment and economic activity within the community and the province.

## 1.1 Port Alberni Port Authority

The PAPA was formed July 1, 1999, as a continuation of the Port Alberni Harbour Commission. The authority manages day-to-day operations of the harbour, and the long term development and improvement of the waterfront facilities. Unlike other port authorities, PAPA does not contract out its terminal operations. The terminals are in operations 24 hours a day, seven days a week, when required, and have three deep-sea berths with a storage assembly area of 17 acres. Historically, the terminal has mainly handled lumber, pulp, newsprint, plywood and logs.

Additionally, the port authority operates four marinas: Clutesi Haven, China Creek and Harbour Quay, are pleasure craft marinas, and Fisherman's Harbour is a small craft harbour for commercial fishermen. There are over 1,000 berths at the marinas; with 543 berths at the pleasure craft marinas, and 500 berths at Fisherman's Harbour.

In addition to the Port Authority's Terminals and Marinas, it leases land from the Regional District to operate a 250 site campground, and manages over 100 leases and land exchange agreements.

### 1.1.1 History and Governance

The port was initially established in 1947, and as a Harbour Commission was governed by the Harbour Commission's Act of 1964. PAPA is a continuation of the Harbour Commission and was proclaimed in 1999 pursuant to the *Canada Marine Act*.

The governance of the PAPA is directed by a seven member Board of Directors, and a seven member Port Advisory Nominating Committee. Three members of the Board are appointed by the federal, provincial and municipal governments, and the remaining four appointments are made by the Minister of Transport with input from the Port Advisory Nominating Committee. The Board is responsible for the activities of the port, and selects a Port Manager to manage the port's day-to-day operations. The Port Advisory Nominating Committee is selected by businesses within the four classes of users of the port, they are: Commodity Shippers, Carriers, Service Providers, and Other Port Related Businesses.

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<sup>6</sup> Taxation impacts are based on calendar year 2011. Employment, wage, GDP and economic output impacts are based on June 2012 operations.



### 1.1.2 Port Alberni Port Authority Terminals

To effectively facilitate international and coastal trade, Port Alberni terminals have shore services, including Canada Customs and Immigration, shipping agents, stevedoring companies, tugs and shipyards. The port's three berths and four warehouses are:

- **Berths 1 and 2.** 320 metres long and a depth alongside of 11.4 metres at zero tide.
- **Berth 3.** 183 metres long and a depth alongside of 12.2 metres at zero tide.
- **Warehouses.** Located on the shipping berths, 4,645 square metres in total, and store up to 9,000 tonnes.

The primary exports moving through Port Alberni terminals are local forest products. The forest products are mainly comprised of lumber, and are destined to foreign markets.

Port Alberni Port Authority marinas include:

- **China Creek Marina.** Located approximately eight kilometres south of the inner harbour, with 88 slips, and next to the China Creek Campground.
- **Clutesi Haven Marina.** Located on the tidal fresh waters of the Somass River, the Clutesi Haven Marina is able to accommodate 170 pleasure craft, and features a four lane launch ramp, fuel docks, and a fish cleaning station.
- **Harbour Quay Marina.** Located in downtown Port Alberni, the Harbour Quay Marina has 15 slips for moorage, and is the newest of the Port Authority's recreational boating facilities.
- **Fisherman's Harbour.** Located in the downtown area, Fisherman's Harbour accommodates the commercial fishing fleet, tugs, salvage vessels, and pleasure craft.

## 1.2 What is Economic Impact?

*Economic impact* is a measure of the spending and employment associated with a sector of the economy, a specific project (such as the construction of a new facility), or a change in government policy or regulation. Economic impact can be measured in various ways. Two of the most popular ways to assess economic impact are in terms of the dollar value of industrial output produced, or in terms of person years (full-time equivalents (FTEs)) of employment generated. Other measures are value-added (GDP) and value of capital used and/or created. All of these are used to express the gross level of activity or expenditure from a sector of the economy, a specific project or a change in policy or regulation. As such, they are not "net" measures that weigh benefits against costs; nevertheless, these measures can be useful in developing an appreciation of projects, investments and economic sectors.

The economic impact can be broken down into the following categories:

**Direct employment** is employment that can be directly attributable to the operations in an industry, firm, etc. In the case of ongoing operations at PAPA, all of the jobs involved in moving goods through the port would be considered direct employment. The direct employment base includes employees of the terminal operator, tug operators, ships' agents and other related firms.

**Indirect employment** is employment at a supplier industry that is supported by expenditures by port businesses. For the PAPA, it would include the portion of employment in supplier industries, which are dependent on sales to the port terminal. For example, a repair company that provides repair services to the terminal would be considered indirect employment.

**Induced employment** is employment generated from expenditures by individuals employed indirectly or directly. For example, if a longshoreman decides to expand or re-model his/her home, this would result in additional (induced) employment hours in the general economy. The home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc.

**Total employment** is the sum of direct, indirect and induced effects. The multiplier (indirect and induced) economic impacts represent the maximum potential stimulus to the economy resulting from ongoing operations of the PAPA.

### 1.3 Scope of the Study

This study quantifies the existing economic impacts related to the port's businesses, trade and shipping. The port's direct employment includes all jobs at businesses situated on land administered by the PAPA and jobs at all offsite businesses directly related to the port's trade and shipping.

- Onsite direct employment includes employees of the terminal operator, tug operators and other firms that are situated on or operate on land administered by the Port Authority.
- Offsite firms that facilitate and monitor the port's trade and shipping are included in the direct employment impact of the PAPA. Examples of these offsite firms would include ships' agents, shipping agents, government agencies, and truckers that operate in the trade and transportation corridor encompassed within British Columbia.

### 1.4 Study Outline

This report provides an estimate of the economic impacts and tax impacts of employment related to the PAPA.

- The methodology for estimating the current economic impact of ongoing operations at the PAPA is explained in **Section 2**.
- **Section 3** measures and describes the current economic impact of the PAPA, including the direct employment base, indirect and induced employment impacts, and GDP and economic output impacts related to the port's ongoing operations.
- In addition, the spending of ships' crew while in Port Alberni, and its corresponding economic impacts, are also estimated in **Section 4**.

- By estimating taxes paid by the Port Authority, employers, employees and ships' crew arriving at the port, **Section 5** measures the tax contribution of the PAPA.
- **Section 6** estimates the economic impacts associated with the port's capital expenditures in 2012.
- Finally, the economic impact study results are summarised in **Section 7**.

## 2. Methodology

This section outlines the methodology used in updating the economic impact of ongoing operations of the Port Alberni Port Authority (PAPA).

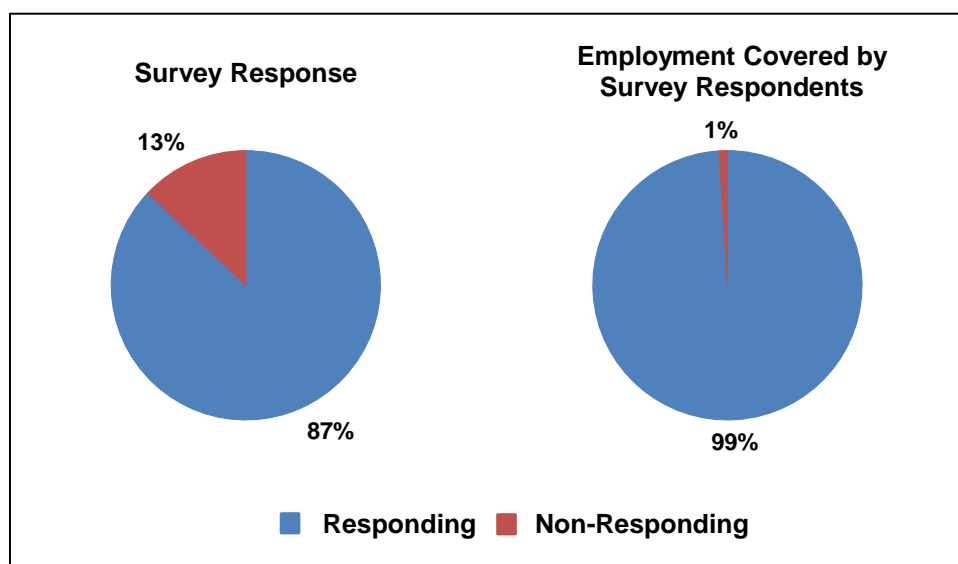
### 2.1 Estimating Direct Employment

The direct employment base related to ongoing operations at PAPA is first measured with an employer survey. Employment figures are generally more understandable by the public than more abstract measures, such as economic output or GDP. Employment figures also have the advantage of being a more accurate measure, both because the firms are more likely to provide data on employment, as opposed to information on revenues, wages and other monetary amounts, and because there is less chance of double counting economic activity.

The economic impact study then assesses the indirect and induced (or “multiplier”) employment supported by PAPA’s related operations, as well as economic activity in terms of economic output and GDP using Statistics Canada economic multipliers. The economic multipliers produced by Statistics Canada translate the number of direct person years of employment in a specific economic sector into the associated monetary measures of economic activity. The tax revenues generated annually by operations of PAPA are also estimated.

### 2.2 Surveying Direct Employment

Employment attributable to ongoing operations of the PAPA was measured by surveying 85 tenants and related businesses and organizations located at the port and other businesses economically linked to the port. Specifics of the survey methodology are contained in the **Appendices** and a sample copy of the survey is provided in **Appendix B**. Telephone follow-up was conducted to increase the response rate. In total, 87% of the businesses and organizations contacted responded to the survey, representing nearly 99% of total person years of employment covered by the survey. A summary is provided in **Figure 2-1**. **Appendix A** shows a breakdown of survey responses by firm type.

**Figure 2-1: Response Rate (Employers and Person Years)**

## 2.3 Inferring Employment

Employment was “inferred” for firms that did not respond to the survey by using a proven and accepted methodology.<sup>7</sup> This includes using other sources of employment information, such as past employment surveys or using survey results for firms of similar types. A conservative approach was taken when using other survey or employment information to infer for non-responding firms.

There may be firms which were not surveyed simply because it was not known that they existed. We do not include an estimate of employment for such non-surveyed firms because there is no basis for an assessment. In any event, we expect most of these to be very small in terms of missed employment (See **Appendix E** and **Appendix F**).

## 2.4 Economic Multipliers

Measurement of indirect and induced economic activity is difficult. While it might be possible to conduct a survey of such employers, the survey would need to cover thousands of firms for indirect employment. For induced employment, the entire economy would need to be scrutinised. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured by the use of *economic multipliers*. Multipliers are derived from economic/

<sup>7</sup> The methodology employed in this study to infer for non-respondents is also used by the federal government for estimating the national income and product accounts.

statistical/accounting models of the general economy.<sup>8</sup> They come in a variety of forms and differ greatly in definition and application. Thus, great care must be exercised in choosing the appropriate set of multipliers to use. In addition, the use of multiplier analysis is limited by a number of factors, these being:

- the accuracy of the structure and parameters of the underlying model;
- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;
- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

Multiplier impacts must be interpreted with caution since they may be illusory when the economy experiences high employment and output near industry capacity. When they are reported, it is recommended that the reader be reminded of the limitations on the use of multipliers. Mindful of these limitations, this study has undertaken multiplier analysis to estimate indirect and induced employment.

## 2.5 Study Time Frame

The employment survey was conducted between June to August 2012 and the results reflect employment in 2012.

## 2.6 Jobs versus Person Years

Traditionally, one measures employment by the number of jobs. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of economic impact. Whenever possible, employment impacts are measured both in terms of the number of jobs and the number of person years.<sup>9</sup>

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<sup>8</sup> The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2008 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

<sup>9</sup> One person year is equivalent to 1,832 hours of work. See **Appendix C** for a detailed calculation of the number of hours per person year. Person years are the same as full time equivalents (FTEs).

### 3. Economic Impact of Ongoing Operations

This section describes the economic impact attributable to ongoing operations of the Port Alberni Port Authority (PAPA). Direct economic impact measures the employment and economic impact directly associated with the port (e.g., employees and operations of the terminal operator, tug operators, ships' agents, etc.). Indirect and induced impacts are multiplier impacts in the wider economy stimulated by the port's activities (e.g., other businesses that supply goods and services to the port and spending by port employees). The direct economic impacts are based on data from the employer survey, while the multiplier impacts are inferred from Statistics Canada data.<sup>10</sup>

#### 3.1 Direct Employment Impacts

##### 3.1.1 Direct Employment and Wages

Direct employment related to ongoing operations of the PAPA amounts to 930 jobs. After adjusting for part-time and seasonal employment, the 930 jobs amount to 870 person years of employment. Employees at the port and related firms earn approximately \$48 million in wages, yielding an average of \$55,000 per person year of employment. Employment figures are summarised in **Figure 3-1** for wages as well as jobs and person years.

**Figure 3-1: Direct Employment and Wages attributed to PAPA Operations**

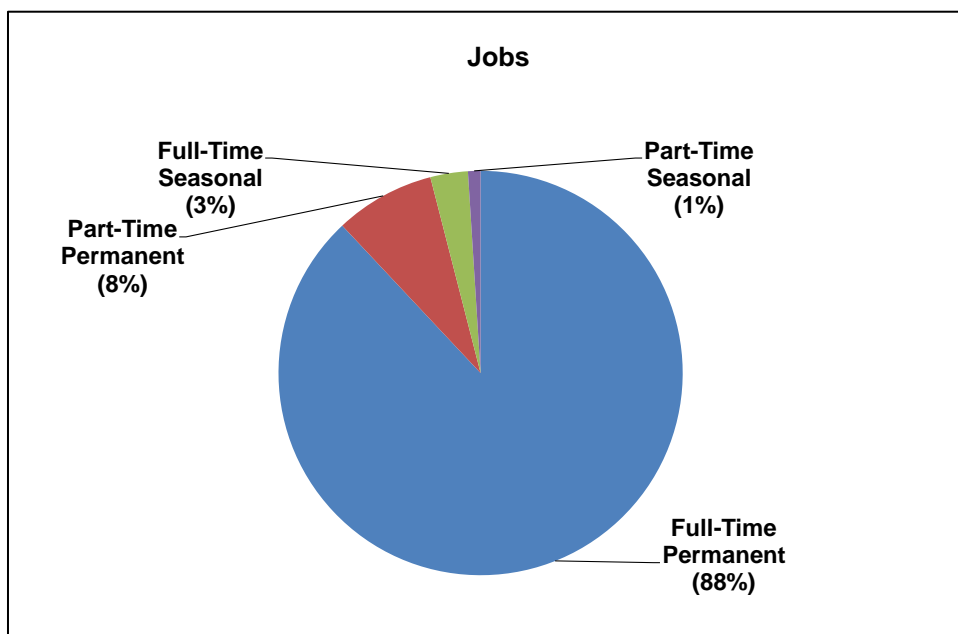
Type of Impact	Employment (Jobs)	Employment (Person Years)	Wages (\$ Millions)
<i>Direct</i>	930	870	48

##### 3.1.2 Full-Time versus Part-Time and Seasonal Employment

Based on the surveyed jobs attributable to the PAPA's operations and other port related businesses, approximately 96% of these jobs are permanent positions, while 4% of these jobs are seasonal positions.<sup>11</sup> Approximately 91% of the permanent positions are full-time positions, comprising 88% of all surveyed jobs. The breakdown of permanent and seasonal jobs by full-time and part-time positions is presented in **Figure 3-2**.

<sup>10</sup> Emphasis is placed on the direct economic impacts as these are based on data from the employer survey and are clearly identifiable.

<sup>11</sup> The breakdown of employment by permanent and seasonal positions does not include contract and inferred employment.

**Figure 3-2: Full-Time vs. Part-Time Employment of Jobs attributed to PAPA Operations**

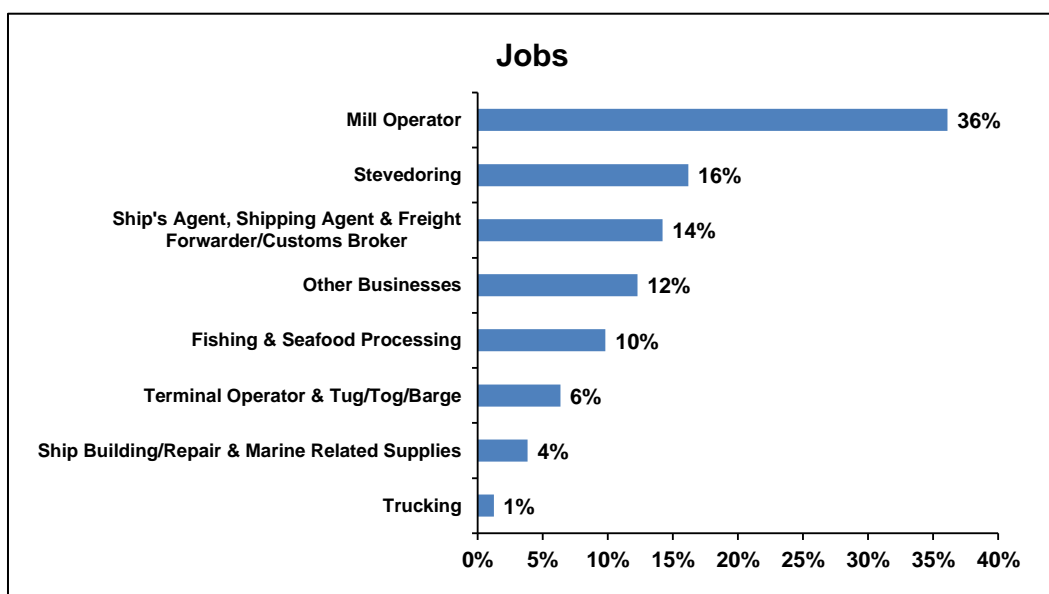
Note: Does not include contract and inferred jobs.

### 3.1.3 Direct Employment by Industry Type

Employment associated with operations of the PAPA can be classified by industry type as shown in **Figure 3-3**.<sup>12</sup> Employment by mill operators directly related to the port comprises approximately 36% of the total direct jobs surveyed. Approximately 16% can be classified as stevedoring labour, while 14% of direct surveyed employment is classified as employment by ships' agents, shipping agents and freight forwarders/custom brokers. Employment by fishing firms and seafood processing firms account for 10% of direct surveyed jobs. The terminal operator and tug/tow/barge firms make up approximately 6% of direct surveyed jobs, while ship building and marine related supplies firms make up 4% of direct surveyed jobs. An estimate of 1% can be attributed to direct port employment in the trucking industry. Other businesses, including tourism firms and professional associations, comprise 12% of total surveyed jobs.

<sup>12</sup> Breakdown of employment by industry type is provided for direct surveyed jobs only, and does not include contract and inferred employment.



**Figure 3-3: Employment attributed to PAPA Operations by Industry Type**

Note: Does not include contract and inferred jobs.

## 3.2 Multiplier Employment Impacts

### 3.2.1 Indirect Employment Impacts

Indirect employment is employment in industries that supply or provide services to port businesses. Using British Columbia employment impact multipliers, 660 person years were estimated for total indirect person years related to the PAPA. The source of the multipliers was Statistics Canada's 2008 Interprovincial Input-Output Model.<sup>13</sup> This total suggests that 660 person years of employment are indirectly generated in British Columbia industries that supply the businesses of the port. Labour income associated with the total indirect employment is estimated at \$35 million per annum.

### 3.2.2 Induced Employment Impacts

Induced employment is somewhat more complicated than indirect employment. It is employment created because of expenditures by individuals employed both directly and indirectly by the port's businesses. It is the demand for goods and services generated by wage earnings from economic activity at the port. Induced employment attributable to the PAPA is estimated at 460 person years.<sup>14</sup> Induced employment is associated with a wage bill of \$26 million per annum.

<sup>13</sup> The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2008 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

<sup>14</sup> Statistics Canada has recommended ratios of induced to direct plus indirect impacts which are used here.

### 3.2.3 Total Employment

**Figure 3-4** summarises the direct, indirect, induced and total employment attributable to ongoing operations of the PAPA to the British Columbia economy.

**Figure 3-4: Direct and Total Employment attributed to PAPA Operations in British Columbia**

Type of Impact	Employment (Jobs)	Employment (Person Years)	Wages (\$ Millions)
<i>Direct</i>	930	870	48
<i>Indirect</i>	700	660	35
<i>Induced</i>	490	460	26
<b>Total BC Impacts</b>	<b>2,120</b>	<b>1,990</b>	<b>109</b>

## 3.3 Other Economic Impacts

**Figure 3-5** provides economic output and GDP impacts related to employment attributable to ongoing operations of the PAPA for the Province of British Columbia.

**Figure 3-5: Direct and Total GDP and Economic Output attributed to PAPA Operations in British Columbia**

Type of Impact	GDP (\$ Millions)	Economic Output (\$ Millions)
<i>Direct</i>	86	237
<i>Indirect</i>	72	141
<i>Induced</i>	47	114
<b>Total BC Impacts</b>	<b>205</b>	<b>492</b>

The direct employment attributed to ongoing operations of the PAPA described in **Section 3.1.1** generates \$86 million in direct gross domestic product and \$237 million in direct economic output in the provincial economy. Including multiplier effects, operations at the port may be supporting up to \$205 million in total (direct, indirect and induced) GDP and \$492 million in total economic output, economy-wide in British Columbia.

## 4. Economic Impact of Ships' Crew Spending at Port Alberni

Vessels arriving at the port will bring in crew members, who will spend money on items such as food and beverage, local transportation, etc. at Port Alberni. This section presents the estimated spending of ships' crew while in Port Alberni and its corresponding economic impacts.

### 4.1 Estimated Ships' Crew Spending at Port Alberni

According to the Port Alberni Port Authority (PAPA), approximately 21 crew per vessel arrive at the port, each staying approximately 4 days and 3 nights in the City of Port Alberni, on average. By applying average expenditure data, it is estimated that each crew member spends an average of \$244.00 per visit while at Port Alberni.<sup>15</sup> With an average of 55 vessels arriving at Port Alberni each year, total ships' crew spending per annum is estimated to a total of \$280,000. **Figure 4-1** provides a breakdown of average annual crew member expenditure by category.

**Figure 4-1: Estimated PAPA Ships' Crew Spending per Annum by Category**

Spending Category	Estimated Annual Expenditure (\$ Thousands)
Food & Beverage	\$240
Other Retail	\$30
Local Transit (to/from port)	\$10
<b>Total Estimated Spending</b>	<b>\$280</b>

Notes: Parameters and assumptions used in the estimation of ships' crew spending can be found in **Appendix G**.

<sup>15</sup> Average spending per crew is based on estimated expenditure for food and beverage, other retail and local transit (to/from port). It is assumed that food and beverage expenses amount to \$17.00 per meal, based on the Canada Revenue Agency Travel Allowance, with three meals per day. An average of \$28.00 per visit is estimated for other retail spending based on a 2008 study on crew spending at BC ports conducted by the Business Research and Economic Advisors (BREA). Local transit expenses are based on interviews with a local taxi firm, wherein the return trip cost of transportation from port to town was estimated. Parameters and assumptions used in the estimation of ships' crew spending can be found in **Appendix G**.

## 4.2 Economic Impact of Ships' Crew Spending at Port Alberni

Statistics Canada's economic impact multipliers are used to estimate the direct employment generated by each dollar of ships' crew spending, as well as wages and GDP.<sup>16</sup> The employment and economic impacts associated with ships' crew spending at Port Alberni could potentially include up to three **direct** person years of employment and \$110,000 in **direct** GDP per annum. Including multiplier impacts, this expenditure could support a total of five person years of employment and \$220,000 in total GDP annually to the Province of British Columbia. The total economic impacts of the annual ships' crew spending is summarised in **Table 4-2**.

**Figure 4-2: Total Economic Impact of PAPA Ships' Crew Spending in British Columbia, 2012**

Type of Impact	Employment (Jobs)	Employment (Person Years)	Wages (\$ Thousands)	GDP (\$ Thousands)	Economic Output (\$ Thousands)
<i><b>Direct</b></i>	3	3	80	110	280
<i><b>Indirect</b></i>	1	1	30	60	110
<i><b>Induced</b></i>	1	1	30	50	110
<i><b>Total BC Impacts</b></i>	<b>5</b>	<b>5</b>	<b>140</b>	<b>220</b>	<b>500</b>

<sup>16</sup> The multipliers used for the analysis are based on Statistics Canada economic multipliers for British Columbia from the 2008 Interprovincial Input-Output model, the most recent available. These multipliers were updated with Consumer Price Indices to account for inflation.

## 5. Tax Revenue Impacts of the Port Alberni Port

### 5.1 Introduction

This part of the report documents the current contribution to government revenues resulting from operations of the Port Alberni Port Authority (PAPA) and the associated economic activity.<sup>17</sup> This includes revenues received by federal, provincial and municipal governments.

Revenue contributions are divided into three groups, based on who is making the payment:

- **Taxes paid by ships' crew.** These include taxes on expenditures by ships' crew, such as food and beverage, local transportation and retail.
- **Taxes paid by employers and employees.** These include income and payroll taxes, social insurance contributions (such as the employment insurance premiums) for all direct employment associated with the PAPA and the federal and provincial corporate income taxes paid by employers.
- **Taxes paid by the Port Authority.** These include property taxes, municipal accord agreements and gross revenue charges.

For each category, taxes paid to the federal and provincial government are separately identified.<sup>18</sup>

The purpose of this section is to present the tax revenue contributions resulting from the activity attributable to the PAPA. As with all such studies, a conceptual decision has to be made as to how broad a definition of economic activity should be used in measuring the impacts. For this study we have taken a relatively narrow definition. For example, we have not included:

- Taxes associated with indirect or induced employment (i.e., multiplier effects).
- Consumption taxes (GST and PST) paid by port employees when they spend their income.
- Excise or import taxes on cargo.
- Taxes paid by port users outside of the port.

It would be very difficult to broaden the scope of the tax base in this analysis to include taxes generated by indirect and induced employment. The level of detail collected on direct employment by the survey is critical to the analysis, but such information is not available for the indirect and induced employment. This being the case, impacts and speculation about the general economy would be complex and averages would not necessarily be precise or accurate. Therefore, the tax analysis in this report is limited to revenues attributable to direct employment only.

---

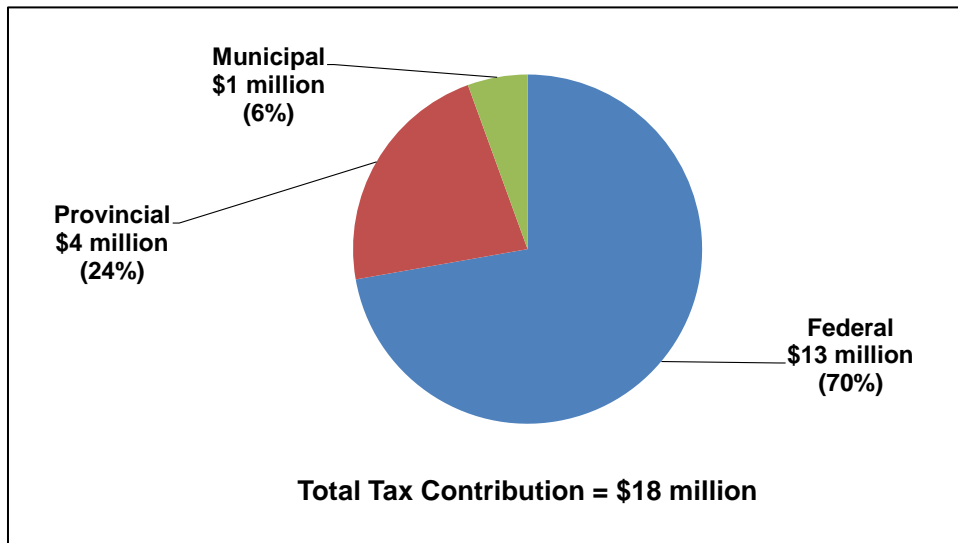
<sup>17</sup> All estimates are for the 2011 calendar year, unless otherwise stated. See **Appendix H** for basic assumptions of the tax study.

<sup>18</sup> For the most part, this study **estimates** taxes paid from information on the employers and employees within the Port Alberni Port. In a few situations, such as the Marine Navigation Services Fees paid by employers, an approximate method was used to estimate taxes paid. In every case, conservative methods were used. No major tax has been excluded.

## 5.2 Taxes by Level of Government

The total tax impact of the PAPA is approximately \$18 million. The federal government is the largest recipient of tax revenue, receiving nearly \$13 million (70% of the total), as seen in Figure 5-1.

**Figure 5-1: Breakdown of Tax Revenues by Government**



In 2011, ongoing economic activity of the PAPA generated tax revenue contributions to all levels of government are estimated to be in the order of \$33 million.

- Taxes on expenditures of ships' crew amounted to \$0.03 million in tax revenue (1% of the total).
- Employers and employees paid approximately \$18 million (97% of the total), largely through a personal and corporate income tax, CPP and EI contributions.
- The Port Authority paid \$0.40 million (2% of the total) in municipal accord agreements, property taxes, gross revenue charges and provincial leases.

A complete summary of tax contributions attributed to operations of the PAPA is provided in Figure 5-2.

**Figure 5-2: Current Tax Contributions of PAPA Operations, 2011**

SUMMARY OF TAX CONTRIBUTIONS BY THE PORT ALBERNI PORT AUTHORITY - 2011							
	Federal		Provincial		Municipal		All Gov'ts Amount (\$m)
	Tax	Amount (\$m)	Tax	Amount (\$m)	Tax	Amount (\$ms)	
Paid by Ships' Crew	GST on Food & Beverage	0.01	PST on Food & Beverage	0.01			
	GST on Retail	0.002	PST on Retail	0.002			
	GST on Local Transportation	0.001	PST on Local Transportation	0.001			
	Total	0.02	Total	0.01			0.03
Paid by Employers or Employees	Personal Income Tax	5.71	Personal Income Tax	2.04	Property Taxes	0.89	
	Corporate Income Tax	1.46	Corporate Income Tax	0.62			
	EI - Employer	0.88	WCB	0.90			
	EI - Employee	0.63	MSP	0.63			
	CPP - Employer	1.88					
	CPP- Employee	1.88					
	Marine Navigation Service Fees	0.19					
	Total	12.64	Total	4.19	Total	0.89	17.72
Paid by Port Alberni Port Authority	Gross Revenue Charge	0.10	Provincial Leases	0.14	Property Taxes Municipal Accord	0.04 0.10	
	Total	0.10	Total	0.14	Total	0.13	0.38
	Grand Total	12.76	Grand Total	4.35	Grand Total	1.02	18.13

Note: Totals may not add up due to rounding.

## 6. Economic Impact of 2012 Capital Expenditures

In addition to the employment and other economic impacts of ongoing operations from the Port Alberni Port Authority (PAPA) business community, there are also economic impacts associated with the port's capital expenditures.

The capital expenditures include spending on construction, equipment, and raw and finished materials, all of which support employment, GDP, economic output and taxes. Using Statistics Canada economic multipliers, the economic impacts of the port's capital expenditures in 2012 were estimated. These multipliers estimate the direct, indirect and induced employment generated by each dollar of capital spending, as well as wages, GDP and economic output.

In 2012, the PAPA spent over \$1.7 million dollars in capital expenditures.<sup>19</sup> This generated nine **direct** person years of employment, earning \$430,000 in **direct** wages. The total economic impact of the port's 2012 capital expenditures is summarised in **Figure 6-1**.

**Figure 6-1: Total Economic Impact of PAPA's Capital Expenditures in British Columbia, 2012**

Type of Impact	Employment (Person Years)	Wages (\$ Thousands)	GDP (\$ Thousands)	Economic Output (\$ Thousands)
<b><i>Direct</i></b>	9	430	790	1,730
<b><i>Indirect</i></b>	6	310	530	1,000
<b><i>Induced</i></b>	4	220	390	910
<b><i>Total BC Impacts</i></b>	<b>19</b>	<b>960</b>	<b>1,710</b>	<b>3,640</b>

<sup>19</sup> Estimated capital expenditures for 2012 were provided by the Port Alberni Port Authority.



## 7. Summary of Economic Impact Results

Ongoing operations of the Port Alberni Port Authority (PAPA), including ships' crew spending, may support up to a *total* of 2,120 jobs equivalent to 1,990 person years of employment province-wide, when multiplier impacts are present. Of this employment, 930 jobs (equal to 870 person years) are *directly* related to the port. Because jobs related to the port extend far beyond Port Alberni, the total also includes both indirect (approximately 660 person years) and induced employment (460 person years).

The PAPA generates direct employment in Port Alberni and contributes significantly to the British Columbia economy. The significance of the port in terms of the provincial economy is demonstrated by the *direct* economic impact of the ports' employment on GDP and output, measured at \$86 million and \$237 million, respectively. Including indirect and induced impacts, the *total* impacts are approximately \$205 million and \$492 million, respectively. **Figure 7-1** summarises the economic impacts of ongoing operations of the PAPA.

**Figure 7-1: Total Ongoing Economic Impacts of PAPA Operations in British Columbia, 2012**

Type of Impact	Employment (Jobs)	Employment (Person Years)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
<b><i>Direct</i></b>	930	870	48	86	237
<b><i>Indirect</i></b>	700	660	35	72	141
<b><i>Induced</i></b>	490	460	26	47	114
<b><i>Total BC Impacts</i></b>	<b>2,120</b>	<b>1,990</b>	<b>109</b>	<b>205</b>	<b>492</b>

Notes: Total ongoing economic impacts of PAPA include impacts of ongoing operations at PAPA and ships' crew spending at Port Alberni.

The PAPA is also an important generator of taxation revenues to all levels of government. Total taxes paid on an annual basis, by employers, employees and port users, are estimated at \$18 million per year. The majority of taxes collected accrue to the federal and provincial governments at 70% and 24%, respectively. The municipal government also benefits from the PAPA, such as through the collection of property taxes and municipal accord agreements amounting to over \$1 million paid by the Port Authority and its tenants. Approximately 1% of taxes were paid by ships' crew, 97% of taxes were paid by employers and their employees, and the remaining 2% by PAPA (see **Figure 7-2**).

**Figure 7-2: Estimated Annual Tax Contributions of PAPA by Taxpayer (\$ Millions)**

<b>Taxpayer</b>	<b>Federal</b>	<b>Provincial</b>	<b>Municipal</b>	<b>Total</b>
Ships' Crew	0.02	0.01		<b>0.03</b>
Employers or Employees	12.64	4.19	0.89	<b>17.72</b>
Port Alberni Port Authority	0.10	0.15	0.13	<b>0.38</b>
<b>Total</b>	<b>12.76</b>	<b>4.35</b>	<b>1.02</b>	<b>18.13</b>

## Appendix A: Employment Survey

### Identification of the Survey Population

A total of 85 firms that received employment surveys for the Port Alberni Port Authority (PAPA) economic impact study included port tenants, offsite firms and trucking firms directly related or dependent upon the port. PAPA provided a list of related businesses and, together with InterVISTAS, identified the offsite firms and trucking firms closely tied to port operations.

**Table A-1: Total Number of Firms Surveyed**

Type of Impact	Number of Firms Surveyed	Number of Responding Firms	Response Rate
Tenants and Port Users	78	67	86%
Trucking Firms	7	7	100%
<b>Total</b>	<b>85</b>	<b>74</b>	<b>87%</b>

### Questionnaire Design

The basic questionnaire was designed to be effective in obtaining information and, equally important, to be as clear and easy to understand as possible for respondent firms. The survey was provided to PAPA tenants and certain offsite users of the port. A second survey was developed for trucking firms. The basic questionnaire provided to port tenants and users contained questions in the following areas:

#### General Information

- Name of firm, address
- Contact person's name and title
- Phone and fax numbers
- Email and website address
- Type of business

#### Total Employment Numbers

- Total employees as of June 2012
- Total payroll excluding benefits, 2011
- Employment Related to PAPA

### **Part-time and Full-time Employment**

- Full-time permanent employees
- Part-time permanent employees
- Full-time seasonal employees
- Part-time seasonal employees
- Average hours and weeks worked for part-time and seasonal employees

### **Employment by Trade**

- A selection of job trades was provided to categorise employment
- Outsourcing and contracting out
- Number of individuals on contract and weeks and hours worked
- Number and names of firms on contract

### **Additional Questions**

- Location of Firm (onsite/offsite)
- Type of Business
- Trucking activity to/from PAPA
- Future employment base at PAPA
- Property taxes paid in 2011

Copies of the surveys are provided in **Appendix B**.

## **Conducting the Survey**

The survey was mailed out electronically by InterVISTAS Consulting with a cover letter from PAPA Manager, Property & Community Relations, David McCormick. The letter explained the purpose of the study, the confidentiality of responses and encouraged members of the port business community to participate.

Following the initial electronic mail-out of the surveys and throughout the following weeks, non-responding firms were contacted by telephone to follow up. Firms were encouraged to return the survey and new copies were offered if the originals were lost. The replacement surveys were emailed once again or sent via fax. Some survey responses were collected via a telephone interview with firms.

## **Analysis of the Results**

The survey results were compiled into an MS Excel spreadsheet.

## Appendix B: Sample Survey



**PORT ALBERNI PORT AUTHORITY**  
2750 Harbour Road  
Port Alberni, BC V9Y 7X2  
Tel. (250) 723-5312 Fax. (250) 723-1114  
[www.portalberniportauthority.ca](http://www.portalberniportauthority.ca)

**ADMINISTRATION PORTUAIRE DE PORT ALBERNI**  
2750, Harbour Road  
Port Alberni, BC V9Y 7X2  
Tél. (250) 723-5312 Fax. (250) 723-1114  
[www.portalberniportauthority.ca](http://www.portalberniportauthority.ca)

July 2012

To all Members of the Port Alberni Port Authority's Business Stakeholders:

**Re: Port Alberni Port Authority Economic Impact Study**

A critical factor in earning community and government support for future initiatives that benefit all port and marina-related businesses is our ability to demonstrate the significant contribution of the Port Authority within our community, regional, provincial and national economies.

The Port Alberni Port Authority (PAPA) has, therefore, commissioned InterVISTAS Consulting (InterVISTAS) to conduct an economic impact study of its ongoing operations. The results of the study will be used to raise public and political awareness of the port and other related businesses' contributions to local employment and economic activity.

We are seeking your cooperation in undertaking this important study through participation in the attached employment survey. In order to keep this initiative on time and on budget, we request that you complete this survey as soon as possible. The completed survey can be submitted directly to InterVISTAS via **one** of the following methods:

- **Electronically** by email to [celina.ramirez@intervistas.com](mailto:celina.ramirez@intervistas.com); or
- **Fax** to 604-717-1818 to the attention of Celina Ramirez

We appreciate that some of the information requested in the survey may be of a sensitive nature to your firm. Please be assured that InterVISTAS will maintain the confidentiality of your survey responses and that the completed surveys will not be viewed by any party other than researchers at InterVISTAS. InterVISTAS will maintain the confidentiality of your survey response and will not provide individual firm results to PAPA. Only the aggregate survey totals will be provided in the final report. The published document will not reveal employment figures or other data for any individual firm.

Thank you for your cooperation in this important study. We all look forward to the results as they will benefit all current and potential new business and industry stakeholders of the Port Alberni Port Authority.

Sincerely,

David McCormick, MBA  
Manager, Property & Community Relations  
Port Alberni Port Authority

**Canada**

*Canada's Inlet Port on the Pacific  
Yours to Cruise and Discover*



**Port Alberni Port Authority**  
Tenant and Port User Group Employment Survey

June 2012

The figures you provide in the following sections are strictly confidential and will be viewed only by InterVISTAS Consulting and reported only in an aggregate form. For the purposes of this study, it is important that the figures you provide are as accurate and current as possible.

**When answering the questions below regarding your business, please include all related subsidiary businesses.**

**Please complete this survey electronically by responding directly into the form.**

Name of Firm: \_\_\_\_\_

Address of Firm: \_\_\_\_\_

City, Province: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Email: \_\_\_\_\_

**Q1. Type of Business (check one)**

Please choose the **ONE** that best describes your business.

- |  |   |
|--|---|
| <input type="checkbox"/> 1. Stevedoring                      | <input type="checkbox"/> 13. Fishing                      |
| <input type="checkbox"/> 2. Ship Building or Repair          | <input type="checkbox"/> 14. Seafood Processing           |
| <input type="checkbox"/> 3. Marina                           | <input type="checkbox"/> 15. Terminal Operator            |
| <input type="checkbox"/> 4. Pilotage                         | <input type="checkbox"/> 16. Mill Operator                |
| <input type="checkbox"/> 5. Tug/Tow/Barge                    | <input type="checkbox"/> 17. Government Agency            |
| <input type="checkbox"/> 6. Berthing Tugs                    | <input type="checkbox"/> 18. Ships' Agent                 |
| <input type="checkbox"/> 7. Freight Forwarder/Customs Broker | <input type="checkbox"/> 19. Shipping Agent               |
| <input type="checkbox"/> 8. Marine Related Supplies          | Exporter - Commodity (ies): _____                         |
| <input type="checkbox"/> 9. Ship Chandler                    | Importer - Commodity (ies): _____                         |
| <input type="checkbox"/> 10. Ship Broker                     |   |
| <input type="checkbox"/> 11. Waste Disposal/Ship Cleaning    | <input type="checkbox"/> 20. Other, please specify: _____ |
| <input type="checkbox"/> 12. Dredging                        |   |



**Port Alberni Port Authority**  
 Tenant and Port User Group Employment Survey

June 2012

## Q2. Location of Firm

Please indicate the general location of your firm:

☐ Port Alberni Port

☐ City of Port Alberni

☐ Outside City of Port Alberni,  
 but in Alberni Valley

☐ Other, please specify:  
 \_\_\_\_\_

## Q3. Business Related to the Port Alberni Port Authority

Please estimate the percentage of your business that is related to the Port Alberni Port Authority.

*For example, a freight forwarder or customs broker might attribute only 20% of their business to the port (the other 80% being rail or truck). Alternatively, if your firm is located onsite at the port or if your firm's existence is completely dependent on the port's operations, please indicate a 100% relationship.*

**Port Related Business:**  
 (as of June 2012)

%

## Q4. Trucking Activity to/from the Port Alberni Port Authority

Does your firm use trucking services to transport goods to or from the Port Alberni Port Authority?

☐ No. (continue to next question)

☐ Yes. If yes, please complete the following table on trucking activity related to your firm. If your firm operates trucks and does not contract out trucking services to another firm, please indicate this.

Name of Trucking Firm	Trucking Firm Contact Information	Average Number of Trips from Port Terminals Per Week	
		LOCAL Trips	NON-LOCAL Trips





**Port Alberni Port Authority**  
 Tenant and Port User Group Employment Survey

June 2012

### Q5. Number of Employees

- A. Please state the total number of employees working for your firm.  
*This figure should include full time, part time and seasonal work but **should not** include employment for work done on contract.*

Total Number of Employees: (as of June 2012)	0
Total Annual Payroll: (Excluding employee benefits, 2011 figures)	

OR, Provide an estimate of the average annual salary per employee \$ \_\_\_\_\_

- |  |   |
|--|---|
| <input type="checkbox"/> Less than \$20,000            | <input type="checkbox"/> Between \$60,000 and \$80,000  |
| <input type="checkbox"/> Between \$20,000 and \$40,000 | <input type="checkbox"/> Between \$80,000 and \$100,000 |
| <input type="checkbox"/> Between \$40,000 and \$60,000 | <input type="checkbox"/> More than \$100,000            |

### Q6. Part-Time and Full-Time Employees

- A. **Permanent Employees:** A permanent employee is one that works year round. In reference to the number of total employees in Q5, how many are permanent employees and how many are full-time and how many are part-time?

Number of Full-Time <u>Permanent</u> Employees:	
Number of Part-Time <u>Permanent</u> Employees:	
Total <u>Permanent</u> Employees:	0

For part-time employees, on average, how many hours per week will they work this year?

Number of Weekly Hours:	
-------------------------	--

*If it is difficult to obtain this information or if there is great variation, you may provide a range of weekly hours (i.e., less than 10 hours, 10-15 hours, etc.).*

- B. **Seasonal Employees:** A seasonal employee is one that is hired for work during peak or specific time periods only. In reference to the number of total employees in Q5, please indicate how many are seasonal full-time and part-time employees?

Number of Full-Time <u>Seasonal</u> Employees:	
Number of Part-Time <u>Seasonal</u> Employees:	
Total <u>Seasonal</u> Employees:	0



**Port Alberni Port Authority**  
 Tenant and Port User Group Employment Survey

June 2012

For seasonal workers, on average, how many **weeks** have they (or will they) work this year?

<b>Number of Weeks per Year:</b>	
----------------------------------	--

For part-time seasonal workers, on average, how many hours per week will they work this year?

<b>Number of Weekly Hours:</b>	
--------------------------------	--

### Q7. Employment by Trade

In order to reflect the diversity of employment associated with the port, please provide us with a breakdown of your total employees, by position.

Employment by Trade		Number or % of Employees
General	Managerial/Supervisory	
	Clerical	
	Sales/Customer Service	
Seaport and Related Support Trades	Pilots	
	Stevedores	ILWU Members
		Non-ILWU Members
	Warehouse Labour	
	Construction/Maintenance Trades	
	Seamen & Officers	
	Inspectors	
	Security Agents	
Ground Transportation	Drivers/Delivery	
	Dispatchers	
	Call Centre	
Other	Shipper	
	Freight Forwarder	
	Customs Broker	
	Engineer	
	Mechanic	
	General Labour (i.e. production)	
Other (Please specify)		



**Port Alberni Port Authority**  
 Tenant and Port User Group Employment Survey

June 2012

### Q8. Outsourcing and Contracting Out

Since we do not want to exclude any employment from the port, we would like you to briefly comment on whether your firm contracts out any important services.

- A. Individuals on Contract:** If you pay some individuals through a contract, as opposed to through payroll, please indicate the number of such employees.

Number of <u>Contract</u> Employees:	
--------------------------------------	--

Of these employees on contract, how many **weeks**, on average, will they work this year? And, on average, how many **hours per week** do they work?

Number of Weeks Per Year:	
Number of Weekly Hours:	

- B. Firms on Contract:** Do you contract any work out to other firms? For example, janitorial services, maintenance and repairs, etc.

☐ **No.** (continue to next question)

☐ **Yes.** If yes, please complete the following table indicating the functions you contract out to other firms and an estimate of the annual hours on contract. Also include the names of the firms you use so we can ensure that we do not double count any work performed by other firms that we are surveying as a part of this study.

*Please do not include contract services to trucking firms answered in Q4.*

Function	Name of Firm	Estimated Number of Hours Performed by Firm in 2011
<i>Example: Janitorial</i>	<i>Spic and Span Cleaners</i>	<i>100 a year (2 hours per week)</i>



**Port Alberni Port Authority**  
Tenant and Port User Group Employment Survey

June 2012

**Q9. Future Employment Base Related to the Port Alberni Port Authority**

Over the next 5 years, do you expect your firm's employment base to:

- ☐ **Increase.** If so, by approximately how many employees? \_\_\_\_\_ employees
- ☐ **No change.** Remain at current levels.
- ☐ **Decrease.** If so, by approximately how many employees? \_\_\_\_\_ employees

**Q11. Property Taxes Paid in 2011**

Please indicate the amount of property taxes paid by your firm in 2011.

<b>Total Property Taxes Paid</b> (2011)	
--	--

---

Thank you for your assistance in completing this survey.

Please return the completed survey electronically by clicking the "Submit Form" icon on the top right hand corner, or by email / fax to:

Attention: Celina Ramirez

Email: [celina.ramirez@intervistas.com](mailto:celina.ramirez@intervistas.com)

Fax: 604-717-1818

If you have any questions, please call  
Celina Ramirez at 1-877-717-6246 (ext. 1845).

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## Appendix C: Calculation of Person Hours per Year

The following are details of calculations for the average number of hours per person year (PY).

**Figure A-1: Person Hours per Year**

Calculation of person hours per year:		
	365	days per year
Less:	(104)	weekend days
	(11)	legal holidays
	(15)	average vacation days
	(6)	sick leave
	229	days per person year
	* 8	hours per work day
	<b>1,832</b>	<b>hours per person year</b>

Workdays vary anywhere from 6.5 to 8 hours; however, an 8 hour workday was assumed.<sup>20</sup> Similarly, numbers of vacation and sick leave days may also vary.

<sup>20</sup> Essentially, we are using a measure of paid hours per year. Using a measure of productive hours per year with 6.5 hour workdays (8 hours less 1 hour for lunch less two 15 minute work breaks) would give 1,489 hours per person year. Using this lower figure would result in inferring a greater number of person years from seasonal and part-time jobs. Using the 1,832 figure, we infer a lower number of person years.

## Appendix D: Summary of Total Jobs and Person Years

**Table D-1: Total Jobs and Person Years**

<b>Total Jobs and Person Years</b>		
	<b>Jobs</b>	<b>Person Years</b>
Surveyed employment <sup>1</sup>	909	854
Inferred employment for non-respondents <sup>2</sup>	8	7
Contract employment <sup>3</sup>	12	8
<b>Total</b>	<b>929</b>	<b>869</b>
<sup>1</sup> Appendix A <sup>2</sup> Appendix E <sup>3</sup> Appendix F		

## Appendix E: Inferred Employment

This appendix describes how employment was inferred for non-responding port employers.

InterVISTAS' approach was to utilise information from responding firms for each type of business and use it, along with publicly available information on individual non-responding firms, to make inferences. This approach is generally deemed to be the best approach, and indeed is often used for developing the national income and products account (i.e. partial survey with inference for non-surveyed or non-responding firms based on responses of surveys received). The approach was conservative in that, unlike the national income and products account inference, we assumed that the non-responding firms were smaller than respondents.<sup>21</sup>

The employment data in this report was constructed from a combination of two sources:

1. **Employment reported by employers on surveys.**
2. **Employment inferred for employers who did not provide a survey response.** Inferred employment was based on employment information from firms in each business type that did respond to the survey. The mean employment of respondents in each business type was calculated, excluding outliers, and then adjusted downwards. For example, especially large firms were excluded from the "mean without outliers" to obtain conservative results. This "adjusted mean" employment for each business type was then applied to the non-respondent firms.

---

<sup>21</sup> As with the national income and products account approach, we recognise and discard outliers in the survey respondents when making inferences for non-respondents.

## Appendix F: Contract Employment

Some firms contract out services which they do not have expertise in providing, or when there are cost advantages to doing so. For example, many port-related firms contract out janitorial, elevator and maintenance services. The employment survey asked firms to identify whether they contracted out some of their work, and to estimate the number of annual hours involved.

Contract work was separated into two distinct categories in the employment survey: i) individual "employees" paid through a contract, rather than via payroll, and, ii) contracting out services to other firms.

The employment results for individuals on contract were derived by counting the number of individual positions for the number of *jobs* and dividing the total hours of employment by 1,832 to estimate person years. The employment results for firms on contract were derived by dividing the total hours of employment by 1,832 to estimate person years.

There were approximately 12 jobs equivalent to 8 person years of contract employment supplied by firms doing work for the Port Alberni Port Authority (PAPA) related firms and contract employees working for firms at PAPA. These included janitorial, maintenance and security services.



## Appendix G: Calculation of Estimated Ships' Crew Spending

The calculation of estimated ships' crew spending is based on the following parameters on number of ships and crew provided by the Port Alberni Port Authority (PAPA) and the following expenditure assumptions based on research conducted by InterVISTAS Consulting Inc.

**Figure G-1: Parameters for Estimated Ships' Crew Spending**

	<b>Average</b>
Ships per year	55
Days at port per trip	4
Nights at port per trip	3
Crew per ship	21

Notes: Parameters used were provided by the Port Alberni Port Authority.

**Figure G-2: Estimated Ship's Crew Spending**

	<b>Average Spend per Visit</b>
Food & Beverage	\$204.00
Other Retail	\$28.00
Local Transit (to/from port)	\$12.00
<b>Total Crew Spending per Visit</b>	<b>\$244.00</b>

Notes: It is assumed that food and beverage expenses amount to \$17.00 per meal, based on the Canada Revenue Agency Travel Allowance, with three meals per day. An average of \$28.00 per visit is estimated for other retail spending based on a 2008 study on crew spending at BC ports conducted by the Business Research and Economic Advisors (BREA). Local transit expenses are based on interviews with a local taxi firm, wherein the return trip cost of transportation from port to town was estimated.

## Appendix H: Tax Revenues Attributable to Employers

### Introduction

This appendix describes the employment and other assumptions on which tax revenues calculations are based. As well, the approaches used to estimate employer and employee contributions to local, provincial and federal governments are presented. All estimates are for the 2011 calendar year, unless otherwise stated.

Some of the taxes pose conceptual questions about how much, or if any, tax revenue from a particular source should be attributed to firms related to the Port Alberni Port Authority (PAPA). These questions are highlighted and simplifying assumptions are put forth.

### Employment in the Port Alberni Port Authority Business Community

The majority of tax calculations in this report depend on direct employment of ongoing operations and total wages. The total direct employment of ongoing operations, in person years, used for these calculations is 868 person years. The total payroll is estimated at \$48 million.

### Personal Income Tax (Federal and Provincial)

**Tax base and rates.** Under the *Income Tax Act* federal income tax is paid on taxable income at a rate that increases with taxable income.

Provincial income tax was formerly calculated as a percentage of federal tax, but most provincial governments have begun collecting taxes on a sliding scale.

#### Estimation Method and Results

Because the tax rate is progressive, the tax paid by a group of employees depends on the distribution of income among those employees. Unfortunately, the distribution of income is not known and average incomes must be used.

Each employee is assumed to pay tax as a single tax filer. Estimated income tax payable is \$5.71 million in federal tax and about \$2.04 million in provincial tax.

The average tax rates used are derived from the more detailed calculations of taxes payable shown in **Figure B-2**. In those calculations, assumptions have been made about income from non-employment sources, tax deductions from income (e.g. RPP and RRSP contributions), and tax credits applied against tax otherwise payable (e.g. CPP, EI and charitable contributions). Average credits are calculated from Revenue Canada, *General Income Tax Forms*, 2011.

**Figure H-2: British Columbia Single Tax Filer Income Tax Calculation – 2011**

British Columbia Single Tax Filer Income Tax Calculation							
<b>Income</b>							
Employment	20,000	40,000	60,000	80,000	100,000		
Other	2,000	4,000	6,000	8,000	10,000		
<b>TOTAL</b>	<b>22,000</b>	<b>44,000</b>	<b>66,000</b>	<b>88,000</b>	<b>110,000</b>		
<b>Deductions</b>							
RPP	43	491	1,369	2,408	2,016		
RRSP	257	997	2,269	3,630	7,085		
Carrying Charges	46	138	252	388	742		
Union	40	181	393	573	369		
<b>TOTAL</b>	<b>386</b>	<b>1,808</b>	<b>4,284</b>	<b>6,998</b>	<b>10,213</b>		
<b>Taxable Income</b>	<b>21,614</b>	<b>42,192</b>	<b>61,716</b>	<b>81,002</b>	<b>99,787</b>		
<b>Credits</b>							
Basic Federal	10,572	10,572	10,572	10,572	10,572		
Basic Provincial	11,088	11,088	11,088	11,088	11,088		
CPP	455	1,181	1,590	1,725	1,662		
EI	180	426	527	563	503		
Charity	23	83	147	202	321		
Fed. Total	11,229	12,261	12,836	13,062	13,059		
Prov. Total	11,745	12,777	13,352	13,578	13,575		
Federal Tax Credit Rate	15%	15%	15%	15%	15%		
Provincial Tax Credit Rate	5.06%	5.06%	5.06%	5.06%	5.06%		
Federal Credits	1,684	1,839	1,925	1,959	1,959		
Provincial Credits	594	647	676	687	687		
<b>Tax Payable</b>							
Federal - Bracket 1	3,242	6,232	6,232	6,232	6,232		
Federal - Bracket 2	0	143	4,438	8,681	9,140		
Federal - Bracket 3	0	0	0	0	4,342		
Federal Total	3,242	6,374	10,670	14,912	19,713		
<b>Basic Federal</b>		<b>1,558</b>	<b>4,535</b>	<b>8,744</b>	<b>12,953</b>		<b>17,754</b>
BC - Bracket 1	1,090	1,829	1,829	1,829	1,829		
BC - Bracket 2	0	446	1,964	5,567	5,567		
BC - Bracket 3	0	0	0	964	8,715		
BC - Bracket 4	0	0	0	0	2,136		
BC - Bracket 5	0	0	0	0	2,136		
BC Total	1,090	2,275	3,793	8,360	20,383		
<b>Basic Provincial</b>		<b>496</b>	<b>1,629</b>	<b>3,118</b>	<b>7,673</b>		<b>19,696</b>
<b>TOTAL TAX PAYABLE</b>		<b>2,054</b>	<b>6,164</b>	<b>11,862</b>	<b>20,626</b>		<b>37,450</b>
<b>Average Rate of Tax</b>	<b>9.5%</b>	<b>14.6%</b>	<b>19.2%</b>	<b>25.5%</b>	<b>37.5%</b>		
Federal	7.2%	10.7%	14.2%	16.0%	17.8%		
Provincial	2.3%	3.9%	5.1%	9.5%	19.7%		

## Corporate Income Tax (Federal and Provincial)

All corporations are liable to pay federal income tax under the *Income Tax Act*. The tax rate varies by type and size of company and by province. Provincial governments also levy a corporation income tax on any company having a permanent establishment in that province.

### Estimation Method and Results

1. To calculate tax liability precisely is very difficult. It requires knowledge of the total tax base, and the proportion of the tax base attributable to the provinces. Therefore, an approximate method has been used.
2. In British Columbia, the federal corporate income tax collected per employee was \$1,732 provincial corporate income tax collected per employee was \$729 in 2011.

3. Assuming all companies pay tax at the average rate per employee calculated above, the 2011 corporation income tax liability of the PAPA employment sector is estimated to be \$1.46 million toward federal revenues and \$0.62 million toward provincial revenues. The estimated total corporate income tax revenue is about \$2.08 million as shown in **Figure B-3**.

**Figure H-3: Estimated Corporate Income Tax Paid by Firms**

<b>Government</b>	<b>Revenue (\$ Millions)</b>
Federal	1.46
Provincial	0.62
<b>Total (million)</b>	<b>2.08</b>

## Employment Insurance Premiums

**Tax base and rates.** In 2011, employees in Canada paid employment insurance (EI) premiums equal to 1.78% of earnings up to a maximum of \$787 per year. (Maximum insurable earnings are \$44,200). Employers paid EI premiums equal to 1.4 times employee premiums.

### Estimation Method and Results

The employee premium rate is applied to total payroll costs for employees earning less than \$44,200 per year. The maximum contribution was used for employees earning more than \$44,200 per year. Estimated employee payments were about \$0.63 million in 2011.

The employer rate is applied to the employee payments. Estimated employer payments were about \$0.88 million in 2011.

## Canada Pension Plan Contributions

**Tax base and rates.** In 2011, employee contributions for the Canada Pension Plan (CPP) were 4.95% of pensionable earnings. Pensionable earnings are actual earnings less \$3,500, to a maximum of \$48,300. The maximum annual employee contribution is \$2,218. The employer contribution is the same as the employee contribution.

### Estimation Method and Results

The employee contribution rate is applied to average payroll for employees who are earning less than \$48,300 a year. The maximum contribution was used for employment earning more than the maximum pensionable earnings.

Estimated employer and employee contributions are about \$1.88 million each, for a total of \$3.76 million.

## Workers' Compensation Board Contributions

**Tax base and rates.** Employers in each province are required to make contributions to the Workers' Compensation Board to help offset the cost of on-the-job injuries. Employers are classified into industry groups. The contribution rate for each group is based on the injury costs associated with all companies in that group.<sup>22</sup> The group contribution rate varies widely among industries and provinces. Some major companies are not included in the general "rateable" method of contribution but simply pay the actual cost of their claims plus an allowance for WCB administration costs. As it is not generally known which firms contribute in this manner, nor the value of their claims, an estimate based on reported payroll has been made for all firms.

**Conceptual issues.** It is possible that some companies are self-insured and their payments could be viewed as a business expense rather than a tax. However, we have chosen to include their contribution because they are required to be part of this government-mandated program.

### Estimation Method and Results

The contribution rates for each employment classification at the port have been applied to the total payroll for that group. Employees paid an estimated \$0.90 million to Worker's Compensation in 2011.

## Medical Services Plan Premiums

**Tax base and rates.** Medical Services Plan (MSP) premiums for British Columbia in 2011 were:

Single	- \$60.50 per month
Family of two	- \$109.00 per month
Family of three or more	- \$121.00 per month

**Conceptual issues.** Premiums must be paid by any person registered with the Plan, whether they are employed or not.<sup>23</sup> Therefore, premiums are not directly related to employment. Nevertheless, many employers pay premiums on behalf of their employees. Therefore, premiums are included as a tax contribution.

### Estimation Method and Results

Many employees may be covered by premiums paid by or on behalf of a spouse. Therefore, an employee may not need the coverage offered by an employer. For any group of employees it is difficult to know how many have coverage through a spouse. Therefore, we have assumed that all employees are covered as a result of employment, but that the premium required is only the rate for single persons.

Total employment of 868 person years at \$726 per employed person annually (\$60.50 x 12 months) equals a total contribution of \$0.63 million.

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<sup>22</sup> Subject to Experience Rating Adjustment for individual companies.

<sup>23</sup> Low income persons may qualify for premium assistance.

## Appendix I: Glossary of Terms

**Direct Employment:** Direct employment is employment that can be directly attributable to the operations in an industry, firm, etc. It is literally a head count of those people who work in a sector of the economy. In the case of the port, all of those people who work in a port related capacity would be considered direct employment.

**Economic Activity:** (also Output, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, the process of transforming the factors of production into goods and services desired for consumption.

**Employment Impact:** Employment impact analysis determines the economic impact of employment in terms of jobs created and salaries and wages paid out. In the case of the port, the direct, indirect, induced and total number of jobs or person years created at the port is examined to produce a snapshot of port operations.

**Full Time Equivalent (FTE):** (also Person Year) One full time equivalent (FTE) year of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,832 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.<sup>24</sup>

**GDP:** (also value-added) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

**Indirect Employment:** Indirect employment is employment which results because of direct employment. For the port, it would include that portion of employment in supplier industries which are dependent on sales to port related businesses. In some cases, contract work would be considered indirect employment.

**Induced Employment:** Induced employment is employment created because of expenditures by direct and indirect employees.

**Multiplier Analysis:** Analysis using economic multipliers in which indirect and induced economic impacts is quantified. Essentially, a multiplier number is applied to the "directly traceable economic impact" to produce indirect and total effects (see Multiplier.)

**Multiplier:** Economic multipliers are used to infer indirect and induced effects from a particular sector of the economy. They come in a variety of forms and differ in definition and application. A multiplier is a number which would be multiplied by direct effects in order to calculate indirect or induced effects. In the case of the port, as in many other cases, multipliers can lead to illusory results, and thus must be used with great care.

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<sup>24</sup> *The Dictionary of Modern Economics*, David W. Pearce, General Editor, The MIT Press, Cambridge Mass., 1984

**Output:** (also Economic Activity, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, it is defined as the process of transforming the factors of production into goods and services desired for consumption.

**Tenant:** A firm which pays a lease to a leasing company or to the port authority directly.

**Value-Added:** (also GDP) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.



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